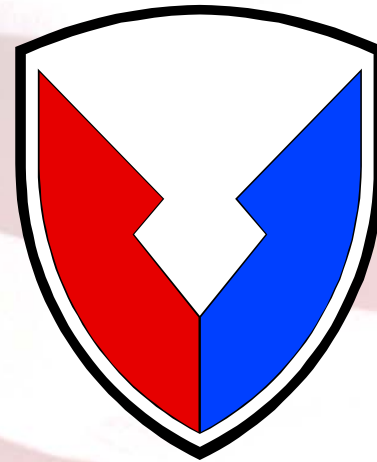

Geza Cseri

***AMC G3, Industrial Base
Capabilities Division***

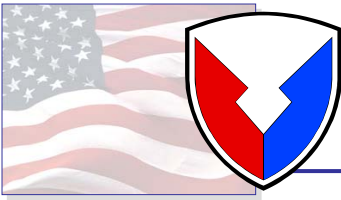
U.S. Army Materiel Command

AMC Organic Base Overview

25 February 2004



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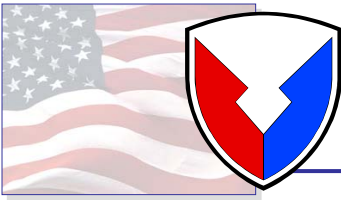
Outline

❖ *Industrial Base Definition*

❖ *Organic Base Today*

❖ *Organic Base Examples*

❖ *Lean Implementation*



Industrial Base Definitions

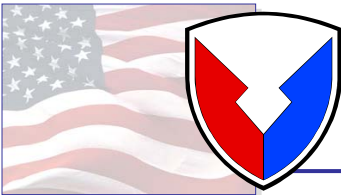
- ❖ *10 USC 2500 -- “national technology and industrial base” ... persons and organizations engaged in research, development, production, and maintenance activities conducted within the U.S. & Canada.*
- ❖ *50 USC 2152 -- “domestic defense industrial base” ... domestic sources providing, or which would be reasonably expected to provide, materials and services to meet national defense requirements during peacetime, graduated mobilization, national emergency, or war.*
- ❖ *FARS 208.7201 – “industrial base”... that part of the total privately-owned and Government-owned production and maintenance capacity of the U.S. & Canada, which will be available during national emergencies to manufacture and repair items required by the Department.*
- ❖ *AR 700-90 -- “Industrial Base” ... the privately owned and Government-owned industrial capacity available for manufacture, maintenance, modification, overhaul, and/or repair of items required by the United States and selected allies, including both the production base and the maintenance base.*



U.S. Army Materiel Command

- *Today's Organic Base* -



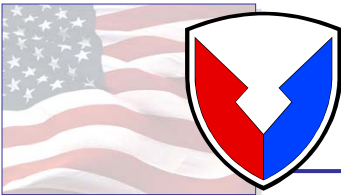


Rock Island Arsenal

- Products/Programs -

- ❖ ***155mm Howitzer, M198***
- ❖ ***105mm Howitzer, M119***
- ❖ ***Recoil Mechanism, Carriage -- Howitzers***
- ❖ ***Final Assembly - Light Towed Howitzer (105mm)***
 - M101A1
 - M102
 - M119
 - M198 (155mm)
- ❖ ***Gun Mounts***
 - 105mm: M140A1 (M60 Tank)
 - 120mm: M1 (M1A2 Tank)
 - 155mm: M178/M182 (M109 Self-Propelled Artillery)
- ❖ ***Howitzer***
 - 165mm: M150 (M728 Combat Engineer Vehicle)
- ❖ ***Mobile Shop Sets & Tool Outfits***
- ❖ ***Forward Repair Systems***
- ❖ ***Contact Maintenance Truck, Heavy***
- ❖ ***Explosive Ordnance Disposal***
- ❖ ***Aircraft weapons sub-systems***
- ❖ ***Spare and repair parts***





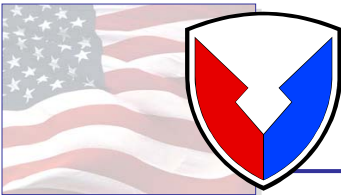
Anniston Army Depot

- Products/Programs -

- ❖ ***M1 Abrams Family of Vehicles***
- ❖ ***Armored Vehicle Launched Bridge (AVLB)***
- ❖ ***M88 Recovery Vehicle***
- ❖ ***Self-propelled Artillery***
 - M109A5 Paladin
 - M109A6 Paladin
 - FAASV
- ❖ ***Towed Artillery***
 - M119 Howitzer
 - M102 Howitzer
 - M198 Howitzer
- ❖ ***M9 Armored Combat Earthmover (ACE)***
- ❖ ***M113 Family of Vehicles***
- ❖ ***Small Arms***

• M16 Rifle	• MK19 MG
• M2 MG 50 cal	• M16A2 Rifle
• M60 MG 7.62 mm	• 30MM Gun Auto
• M240 MG	• M249 SAW
• M4A1 Carbine	• Pistol 9MM
- ❖ ***Mortars and Grenade Launchers***
 - 120MM Mortar





McAlester Army Ammunition Plant

- Products/Programs -

❖ ***Insensitive Munitions Filled Bombs***

- 500 lb
- 1,000 lb
- 2,000 lb

❖ ***Non-Insensitive Munitions Filled Bombs***

- 1,000 lbs
- 2,000 lbs (three types)
- 5,000 lbs

❖ ***Navy Gun Propellant Charges***

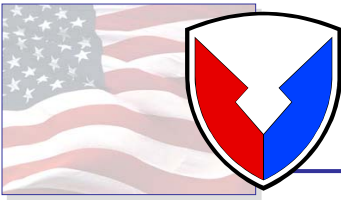
- 5 inch/38 Cal (two types)
- 5 inch/54 Cal (two types)
- 5 inch/62 Cal (two types)

❖ ***Inert Bombs***

- 500 lb (two types)
- 2,000 lb

❖ ***TNT Reclamation***

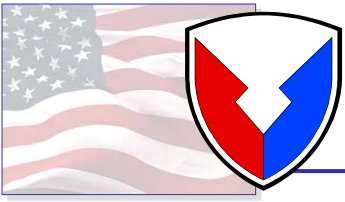




Lean is a Management Philosophy

“...it is a philosophy of manufacturing that seeks to minimize unnecessary time, materials, and effort in the production process”

Standard and Davis, Running Today's Factory, 1999

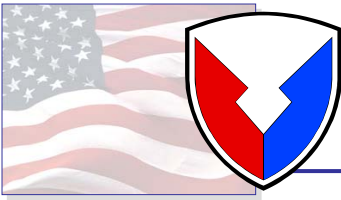


5 Principles of “Lean Thinking”

from "Lean Thinking" by Jim Womack and Dan Jones

- ❖ *Value* (from the customer’s perspective)
- ❖ *Value Stream* (the steps that add value)
- ❖ *Flow* (no stops, piles, or back-ups)
- ❖ *Pull* (on-demand)
- ❖ *Perfection* (waste-free)

“Lean Thinking” is a mindset relentlessly focused on identifying and removing waste from a value stream



Lean Implementation

❖ Lean Implementation results in...

- Improved efficiencies
- Improved customer satisfaction
- Reduce overall resources per project
 - - *People & facilities*
- Continuous process improvement

❖ Depots obtain competitive edge to compete

- Reduce surcharges/rates
- Improved quality
- Encourage partnerships

❖ Productivity = Redeployment, not Unemployment

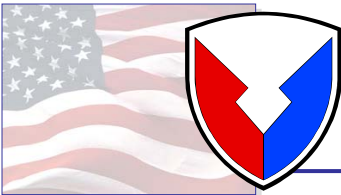
- Reduce overtime
- No attrition replacement
- In-source components
- Grow sales (*quality, cost, and delivery*)
- Large temporary improvement teams

Why Lean?

Its about performance!

- Quality
- Cost
- Delivery

**Help speed improvements
to the bottom line by
growing productivity
faster than attrition**



Transforming AMC's Business Philosophy and Practices



UH-60 A to A Recap **Corpus Christi Army Depot**

- ✓ Plan to reduce Turn-around Time from an estimated 327 days to 150 days
- ✓ Reduced distance traveled from 5.5 miles to 1 mile
- ✓ Reduce the number of buildings from 8 to 4

Lean is...
"a philosophy of manufacturing that seeks to minimize unnecessary time, materials, and effort in the production process"

Standard and Davis, Running Today's Factory, 1999



**Vital to Army
Transformation and the
Industrial Base**

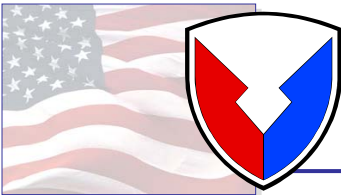


Sidewinder **Tobyhanna Army Depot**

- ✓ Unit Maintenance Cost was reduced by 46%
- ✓ Improved productivity by 12%

PATRIOT Launcher **Letterkenny Army Depot**

- ✓ Savings: 476 Hrs/unit reduction in FY04
- ✓ Personnel Redeployment: 12 = savings of over \$1M
- ✓ Customer Realized FY03 Savings: \$1.2M
- ✓ FY04/FY09 Program Savings = \$16,181,209



Lean Projects/Processes = Efficient Depots

Lean Initiatives

Objective...

Integrate in Business Processes,
both manufacturing &
non-manufacturing

GAO Report from July 03
Cites efficiency and productivity
improvements in Army depot
maintenance operations resulting
from Lean implementation

ANNISTON ARMY DEPOT:

- ✓ 1790-2DR Engine
- ✓ AGT 1500 Turbine Engine Process
- ✓ M1 Fwd Module
- ✓ M1 Rear Module

CORPUS CHRISTI ARMY DEPOT:

- ✓ UH 60 A to A Recap
- ✓ UH 60 Transmission
- ✓ T700 Engine (Six Sigma)

LETTERKENNY ARMY DEPOT:

- ✓ Patriot Antenna Mast Group (AMG) Recap
- ✓ Patriot Radar Recap
- ✓ Patriot Launcher Components
- ✓ Patriot ECS; CRG; ICC

RED RIVER ARMY DEPOT:

- ✓ 903 Engine
- ✓ MLRS Vehicle Remanufacturing
- ✓ SEE Recap
- ✓ Kingpin Fabrication
- ✓ Bradley Vehicle Overhaul
- ✓ HEMTT Vehicle Overhaul

TOBYHANNA ARMY DEPOT:

Sidewinder Missile
Firefinder Recap
AN/TRC-170
AN/VPQ-1

ROCK ISLAND ARSENAL

- ✓ Forward Repair System

SIERRA ARMY DEPOT:

- ✓ Class VIII-Medical Supplies

BLUE GRASS ARMY DEPOT

- ✓ Ammunition Shipping & Receiving

WATERVLIET:

- ✓ 81MM Barrel Process
- ✓ M185 Rebuild Program
- ✓ 155mm Split Ring

MCALESTER ARMY AMMUNITION PLANT:

- ✓ CAM/Outloading Process
- ✓ TNT Reclamation Line
- ✓ Tritonal Reclamation Line

CRANE

- ✓ DO Surveillance Inspection Process
- ✓ ME Dragon Demil Operations

PINE BLUFF ARSENAL

- ✓ M485
- ✓ M40 Mask
- ✓ M295 Decon

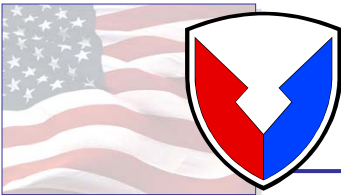
HQ AMC:

- ✓ Materiel Release Process
- ✓ National Maintenance Program
- ✓ AWCF Process

*Lean Increases
Efficiencies & Competitiveness!*



*Increase
Public-Private Partnerships!*



AMC Lean & Six Sigma - Integration -

Command-wide
Process Improvement
Program

Two Powerful Business Improvement Approaches!

Lean

Speed + ~~Waste~~ +
Implicit Infrastructure



Six Sigma

Quality, Cost +
Explicit Infrastructure

Maximize
Process
Velocity

Minimize
Process
Variation

Lean & Six Sigma

Accelerated Rate of Improvement in Customer
Satisfaction, Cost, Quality and Process Speed

Lean is...

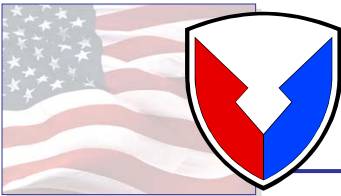
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Standard and Davis, Running Today's Factory, 1999

6 Sigma is...

“a disciplined, structured approach for process and product optimization that provides the tools and methodology for achieving robustness and effectiveness of processes.”

The Quality Management Forum, Fall 2003



Depot Workload - Percent Leaned -

